

OIEP

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/732,091

DATE: 12/26/2000
 TIME: 14:28:29

Input Set : A:\7969-088.app
 Output Set: N:\CRF3\12262000\I732091.raw

ENTERED

4 <110> APPLICANT: Tian, Jing-Hui
 5 Walker, Richard T.
 6 Jackson, W. James
 8 <120> TITLE OF INVENTION: Helicobacter proteins, gene sequences and uses
 9 thereof
 11 <130> FILE REFERENCE: 7969-088
 C--> 13 <140> CURRENT APPLICATION NUMBER: US/09/732,091
 C--> 14 <141> CURRENT FILING DATE: 2000-12-07
 16 <160> NUMBER OF SEQ ID NOS: 44
 18 <170> SOFTWARE: PatentIn Ver. 2.1
 20 <210> SEQ ID NO: 1
 21 <211> LENGTH: 1476
 22 <212> TYPE: DNA
 23 <213> ORGANISM: Helicobacter sp.
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 27 agtttttaattg atttgggctt aaaagaatcg gttttaaaat cegttttatga agcgggcttc 120
 28 acttcccccac gccccattca agaaaaggcc attccggctg ttttgcaagg ccgagatgtc 180
 29 atcgacacaag cccaaacagg cacaggaaaa accgcccgtt tcgctctgcc cattatcaac 240
 30 aaccttaaaa acaaaccacac catagaagcc ctagtgatca cgcaccaccg agaattagcc 300
 31 atgcaaatga gcgatgagat tttaaaattg ggcaaacaca ccaggactaa aaccgtgtgc 360
 32 gtgtatggag gccagagcgt taaaaagcaa tgcgaattca ttaagaaaaa tccccaagtg 420
 33 atgatogeta caccaggaag gctgctcgat cacttaaaaa acgaacgcct ccataaattt 480
 34 gtgcctaaag tggctgcttt agatgaaagc gatgaaatgc tggatatggg gtttttaaac 540
 35 gatattgaag agatttttga ctacctccct agcgaagcgc agattttgct tttttcagcc 600
 36 acgatgccag agcggattaa aagactagcg gataagattt tagaaaaacc tattaaaaac 660
 37 catatcgctc cttctaatat cactaacacc gacatcacc aacgctttta tgtgatcaat 720
 38 gagcatgaga gggccgaagc gatcatgcgc cltttagaca cccaagcacc caaaaagagc 780
 39 attgttttca cgcgcactaa aaaaagaagc gatgaattgc accaattcct tgccttctaa 840
 40 aattacaaaa gcaccgcctt gcatggggat atggatcaaa gggatcggcg ctcttctatc 900
 41 atggcggtta aaaaaaatga cgtgatgtg ttgggtggcta cagatgtggc gagtcgtggg 960
 42 ctgatatta gcggtgttaag ccatgtgttt aattaccact tgcacctaaa cactgagagc 1020
 43 tatatccate gcatcggyag aaccggggca gcgggcaaaa aaggcatggc gatcacttta 1080
 44 gtaaccctt tagaatacaa agagctttta cgcgatgcaa aagaaattga ttcagagatt 1140
 45 gaactttttg aaatcccccac cattaacgaa aatcagatca tcaaaacctt gcatgacgct 1200
 46 aaagtgtctg aagggatcat cagcctttat gaacagctta ccgaaatttt tgagcgtctc 1260
 47 caattggttt taaaactttt gagtttgcag tttagaaacca gcaaaatttg cttaaaccgg 1320
 48 caagaaattg acgcgattca aaaccctaaa gaaaaaacgc caaaaccctc taacaaaaaa 1380
 49 acgccccaac atgagcgagc gcgttctttc aaaaagggtc agcacagaga cagacacct 1440
 50 aaaaacaaac attattctaa aaaaacccaa cgccgt 1476
 53 <210> SEQ ID NO: 2
 54 <211> LENGTH: 492
 55 <212> TYPE: PRT
 56 <213> ORGANISM: Helicobacter sp.
 58 <400> SEQUENCE: 2
 59 Met Glu Leu Asn Gln Pro Pro Leu Pro Thr Glu Ile Asp Gly Asp Ala
 60 1 5 10 15

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62 Tyr His Lys Pro Ser Phe Asn Asp Leu Gly Leu Lys Glu Ser Val Leu
63      20      25      30
65 Lys Ser Val Tyr Glu Ala Gly Phe Thr Ser Pro Ser Pro Ile Gln Glu
66      35      40      45
68 Lys Ala Ile Pro Ala Val Leu Gln Gly Arg Asp Val Ile Ala Gln Ala
69      50      55      60
71 Gln Thr Gly Thr Gly Lys Thr Ala Ala Phe Ala Leu Pro Ile Ile Asn
72 65      70      75      80
74 Asn Leu Lys Asn Asn His Thr Ile Glu Ala Leu Val Ile Thr Pro Thr
75      85      90      95
77 Arg Glu Leu Ala Met Gln Ile Ser Asp Glu Ile Phe Lys Leu Gly Lys
78      100     105     110
80 His Thr Arg Thr Lys Thr Val Cys Val Tyr Gly Gly Gln Ser Val Lys
81      115     120     125
83 Lys Glu Cys Glu Phe Ile Lys Lys Asn Pro Gln Val Met Ile Ala Thr
84      130     135     140
86 Pro Gly Arg Leu Leu Asp His Leu Lys Asn Glu Arg Ile His Lys Phe
87 145     150     155     160
89 Val Pro Lys Val Val Val Leu Asp Glu Ser Asp Glu Met Leu Asp Met
90      165     170     175
92 Gly Phe Leu Asp Asp Ile Glu Glu Ile Phe Asp Tyr Leu Pro Ser Glu
93      180     185     190
95 Ala Gln Ile Leu Leu Phe Ser Ala Thr Met Pro Glu Pro Ile Lys Arg
96      195     200     205
98 Leu Ala Asp Lys Ile Leu Glu Asn Pro Ile Lys Ile His Ile Ala Pro
99      210     215     220
101 Ser Asn Ile Thr Asn Thr Asp Ile Thr Gln Arg Phe Tyr Val Ile Asn
102 225     230     235     240
104 Glu His Glu Arg Ala Glu Ala Ile Met Arg Leu Leu Asp Thr Gln Ala
105      245     250     255
107 Pro Lys Lys Ser Ile Val Phe Thr Arg Thr Lys Lys Glu Ala Asp Glu
108      260     265     270
110 Leu His Gln Phe Leu Ala Ser Lys Asn Tyr Lys Ser Thr Ala Leu His
111      275     280     285
113 Gly Asp Met Asp Gln Arg Asp Arg Arg Ser Ser Ile Met Ala Phe Lys
114      290     295     300
117 Lys Asn Asp Ala Asp Val Leu Val Ala Thr Asp Val Ala Ser Arg Gly
118 305     310     315     320
120 Leu Asp Ile Ser Gly Val Ser His Val Phe Asn Tyr His Leu Pro Leu
121      325     330     335
123 Asn Thr Glu Ser Tyr Ile His Arg Ile Gly Arg Thr Gly Arg Ala Gly
124      340     345     350
126 Lys Lys Gly Met Ala Ile Thr Leu Val Thr Pro Leu Glu Tyr Lys Glu
127      355     360     365
129 Leu Leu Arg Met Gln Lys Glu Ile Asp Ser Glu Ile Glu Leu Phe Glu
130      370     375     380
132 Ile Pro Thr Ile Asn Glu Asn Gln Ile Ile Lys Thr Leu His Asp Ala
133 385     390     395     400
135 Lys Val Ser Glu Gly Ile Ile Ser Leu Tyr Glu Gln Leu Thr Glu Ile

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136                               405                               410                               415
138 Phe Glu Pro Ser Gln Leu Val Leu Lys Leu Leu Ser Leu Gln Phe Glu
139                               420                               425                               430
141 Thr Ser Lys Ile Gly Leu Asn Gln Gln Glu Ile Asp Ala Ile Gln Asn
142                               435                               440                               445
144 Pro Lys Glu Lys Thr Pro Lys Pro Ser Asn Lys Lys Thr Pro Gln His
145                               450                               455                               460
147 Glu Arg Ala Arg Ser Phe Lys Lys Gly Gln His Arg Asp Arg His Pro
148 465                               470                               475                               480
150 Lys Thr Asn His Tyr Ser Lys Lys Pro Lys Arg Arg
151                               485                               490
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155 <211> LENGTH: 759
156 <212> TYPE: DNA
157 <213> ORGANISM: Helicobacter sp.
159 <400> SEQUENCE: 3
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161 ttggatttgt ttgaggtgct tttttttggt aaagacggcg aaaaaagaca caatgaaaaa 120
162 ctgaccagct ccatagaata caaaagqcat ggcgatgatt acyctaataa cgcagaaaga 180
163 atcgetgaag agttgcaata ctatgggagc aatagttttt cqaqtttcat taaaggcgaa 240
164 ggagtcttat acaaagagat tttatgcgat gtgtgcgata aattaaaggt caattacaac 300
165 aagaaaactg aaacgacttt aattgaacaa aacatgcttt ctaaaatctt agaaagaagt 360
166 ttggaagaaa tggatgatga agaagtgaag gaaatgtgcg atgaattatc cataaaaaac 420
167 acggacaatt taacacagaca agccttaagc gcggcgactt taacgctggt taaaatgggg 480
168 ggttttaaat ctatcaattt agctgtcatt gttgcgaatg cggtcgcaaa aaccattcta 540
169 gggcgtggtt talcgtttgc gggcaatcag gtgcttacaa gaactctgag cttlttaaca 600
170 ggtcctgttg gctggatcat tacaggcgta tggacagcga ttgatattgc agggccggct 660
171 tatagggtaa ccataccggc atgcattgtg gttgccactt tacgcctaaa aacacagcaa 720
172 gccaatggag ataagaagtc gttgcaataa gaatccatt 759
175 <210> SEQ ID NO: 4
176 <211> LENGTH: 253
177 <212> TYPE: PRT
178 <213> ORGANISM: Helicobacter sp.
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182 1 5 10 15
184 Ser Ser Asp Leu Asp Leu Phe Glu Val Leu Val Phe Gly Lys Asp
185 20 25 30
187 Gly Glu Lys Arg His Asn Glu Lys Leu Thr Ser Ser Ile Glu Tyr Lys
188 35 40 45
190 Arg His Gly Asp Asp Tyr Ala Lys Tyr Ala Glu Arg Ile Ala Glu Glu
191 50 55 60
193 Leu Gln Tyr Tyr Gly Ser Asn Ser Phe Ala Ser Phe Ile Lys Gly Glu
194 65 70 75 80
196 Gly Val Leu Tyr Lys Glu Ile Leu Cys Asp Val Cys Asp Lys Leu Lys
197 85 90 95
199 Val Asn Tyr Asn Lys Lys Thr Glu Thr Thr Leu Ile Glu Gln Asn Met
200 100 105 110
202 Leu Ser Lys Ile Leu Glu Arg Ser Leu Glu Glu Met Asp Asp Glu Glu

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203          115          120          125
205 Val Lys Glu Met Cys Asp Glu Leu Ser Ile Lys Asn Thr Asp Asn Leu
206          130          135          140
208 Asn Arg Gln Ala Leu Ser Ala Ala Thr Leu Thr Leu Phe Lys Met Gly
209 145          150          155          160
211 Gly Phe Lys Ser Tyr Gln Leu Ala Val Ile Val Ala Asn Ala Val Ala
212          165          170          175
214 Lys Thr Ile Leu Gly Arg Gly Leu Ser Leu Ala Gly Asn Gln Val Leu
215          180          185          190
217 Thr Arg Thr Leu Ser Phe Leu Thr Gly Pro Val Gly Trp Ile Ile Thr
218          195          200          205
220 Gly Val Trp Thr Ala Ile Asp Ile Ala Gly Pro Ala Tyr Arg Val Thr
221          210          215          220
223 Ile Pro Ala Cys Ile Val Val Ala Thr Leu Arg Leu Lys Thr Gln Gln
224 225          230          235          240
226 Ala Asn Gly Asp Lys Lys Ser Leu Gln Ile Glu Ser Ile
227          245          250
230 <210> SEQ ID NO: 5
231 <211> LENGTH: 54
232 <212> TYPE: PRT
233 <213> ORGANISM: Helicobacter sp.
235 <400> SEQUENCE: 5
236 Thr Glu Ile Asp Gly Asp Ala Tyr His Lys Pro Ser Phe Asn Asp Leu
237 1          5          10          15
239 Gly Leu Lys Glu Ser Val Leu Lys Ser Val Tyr Glu Ala Gly Phe Thr
240          20          25          30
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243          35          40          45
245 Arg Asp Val Ile Ala Gln
246          50
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250 <211> LENGTH: 31
251 <212> TYPE: PRT
252 <213> ORGANISM: Helicobacter sp.
254 <400> SEQUENCE: 6
255 Lys Thr Ala Ala Phe Ala Leu Pro Ile Ile Asn Asn Leu Lys Asn Asn
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258 His Thr Ile Glu Ala Leu Val Ile Thr Pro Thr Arg Glu Leu Ala
259          20          25          30
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263 <211> LENGTH: 26
264 <212> TYPE: PRT
265 <213> ORGANISM: Helicobacter sp.
267 <400> SEQUENCE: 7
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269 1          5          10          15
271 Thr Lys Thr Val Cys Val Tyr Gly Gly Gln
272          20          25
275 <210> SEQ ID NO: 8

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276 <211> LENGTH: 41
277 <212> TYPE: PRT
278 <213> ORGANISM: Helicobacter sp.
280 <400> SEQUENCE: 8
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284 Arg Ile His Lys Phe Val Pro Lys Val Val Val Leu Asp Glu Ser Asp
285               20               25               30
287 Glu Met Leu Asp Met Gly Phe Leu Asp
288   35               40
291 <210> SEQ ID NO: 9
292 <211> LENGTH: 31
293 <212> TYPE: PRT
294 <213> ORGANISM: Helicobacter sp.
296 <400> SEQUENCE: 9
297 Ile Phe Asp Tyr Leu Pro Ser Glu Ala Gln Ile Leu Leu Phe Ser Ala
298   1               5               10               15
300 Thr Met Pro Glu Pro Ile Lys Arg Leu Ala Asp Lys Ile Leu Glu
301   20               25               30
304 <210> SEQ ID NO: 10
305 <211> LENGTH: 23
306 <212> TYPE: PRT
307 <213> ORGANISM: Helicobacter sp.
309 <400> SEQUENCE: 10
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311   1               5               10               15
313 Ala Pro Lys Lys Ser Ile Val
314   20
317 <210> SEQ ID NO: 11
318 <211> LENGTH: 36
319 <212> TYPE: PRT
320 <213> ORGANISM: Helicobacter sp.
322 <400> SEQUENCE: 11
323 Ala Asp Glu Leu His Gln Phe Leu Ala Ser Lys Asn Tyr Lys Ser Thr
324   1               5               10               15
326 Ala Leu His Gly Asp Met Asp Gln Arg Asp Arg Arg Ser Ser Ile Met
327   20               25               30
329 Ala Phe Lys Lys
330   35
333 <210> SEQ ID NO: 12
334 <211> LENGTH: 41
335 <212> TYPE: PRT
336 <213> ORGANISM: Helicobacter sp.
338 <400> SEQUENCE: 12
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342 Leu Asn Thr Glu Ser Tyr Ile His Arg Ile Gly Arg Thr Gly Arg Ala
343   20               25               30
345 Gly Lys Lys Gly Met Ala Ile Thr Leu

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VERIFICATION SUMMARY

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L:13 M:270 C: Current Application Number differs, Replaced Current Application Number
L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date

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